Analyzing Autosomal Pedigrees

1. Familiarize yourself with the symbols
   - Squares = males
   - Circles = females
   - Shaded = has the trait/disorder

2. Determine whether the disorder is dominant or recessive
   1. If parents without the trait have offspring with the trait, the trait must be recessive and both of the parents must be carriers
   2. If the trait is seen in every generation, it is most likely dominant (but see the next possibility)
   3. If both parents have the trait, then in order for it to be recessive, all offspring must show the trait
   4. Other guidelines
      - If a trait is dominant
        - Affected individuals must have at least one affected parent
        - Two unaffected parents only have unaffected offspring
      - If a trait is recessive
        - Unaffected parents can have affected offspring

3. Determine the likely genotypes of each individual in the pedigree
   - Start with the recessive genotypes
   - Then fill in the dominant genotypes that must be heterozygotes
     - Look at the phenotypes of their parents and/or offspring
     - Remember, each parent can only pass on one allele to each child
   - If an individual with a recessive genotype has multiple children and none of them have the recessive genotype, then the individual's spouse is most likely homozygous dominant

Note: In autosomal inheritance, both males and females can be affected equally

Analyzing Sex-Linked Pedigrees

If most of the males in the pedigree are affected, then the disorder is most likely X-linked

1. Start by filling in the X and Y chromosomes
    - Males = XY
    - Females = XX
2. Fill in the genotype of all of the males
    - Remember, they cannot be heterozygous, as only the X chromosome is carrying the trait in question
3. Fill in the females with recessive genotypes
4. Fill in the females that must be heterozygotes
    - Look at the phenotypes of their parents and/or offspring
    - Remember, each parent can only pass on one allele to each child
5. Use the "Rules of Inheritance" to help you